

## Polish tool in the field of virtual reality to fight depression



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Virtual reality (VR) technology has been gaining more and more importance in medicine for several years, as scientists, doctors and patients clearly appreciate the benefits it entails. VR is nothing but a three-dimensional image created with the use of information technology and enabling the creation of space, objects and events. The Polish start-up VR TierOne has found a place for itself on this market.

*Photo VR TierOne*

The company has developed a system based on virtual reality and intended for recovery by patients suffering from, for example, heart attacks or strokes, as well as those who have undergone, among others, major cardiac operations. However, the road to developing the system required a lot of commitment. Its beginning is ... relaxing coloring books (mandalas), the task of which was to make the time of seniors or people staying in hospital wards more pleasant. In order to increase the efficiency of these relaxation activities, it was decided to transfer them to the virtual dimension. It was the VR technology that allowed for the development of this task.



## Innovative VR TierOne

VR TierOne was created to improve the mental comfort of patients. Additionally, attention was paid to the rehabilitation aspect. The therapy according to the VR TierOne program consists of three components: a set of medical procedures that support the treatment / rehabilitation process, a device using virtual reality and a therapeutic cycle. The use of virtual reality in the therapeutic process allows you to take advantage of the phenomenon of the so-called immersion, considered in the variant of "absorbing" someone by electronic reality. In a nutshell, it consists in isolating the patient from the conditions in which he or she is currently staying, thanks to which it enables a stronger focus on the treatment session. The perspective of separating from the hospital reality and "closing" in the virtual world gives the patient great psychological comfort. Ultimately, a positive attitude is to translate into faster recovery. What's more, virtual reality, well received by patients, allows you to activate all your senses, and thus - continuous neurological activity. VR TierOne is to significantly reduce the risk of depression in patients, and this is an extremely promising vision, especially in the context of the data presented by the World Health Organization (WHO), which we will present further. especially in the context of data provided by the World Health Organization (WHO), which we will cite below. especially in the context of data provided by the World Health Organization (WHO), which we will cite below.



## Effects are important

Among the many positive factors of VR TierOne therapy, especially those related to improving the mood play a significant role, because it translates into psychophysical relaxation and reduction of pain. Mandalas in virtual reality increase the patient's faith in the success of the process and motivate him to further activity. They improve concentration and visual-spatial functions, and stimulate the areas responsible for the mechanisms of brain plasticity. The innovative virtual reality system supporting treatment, recovery of fitness by sick people, after strokes or heart attacks and serious cardiological operations, can be called even revolutionary. The cost of the device oscillates around tens of thousands. zloty. The equipment is not suitable for home use - it was designed for use in hospitals, clinics or psychotherapeutic or physiotherapeutic offices. An important feature of the design, from the point of view of the operator and user, is the full mobility of the device. Thanks to this, the therapy process may be accessible even to people with mobility difficulties. The creators of VR TierOne intend to develop their innovation, and to this end they cooperate with various entities and carry out additional scientific research.

## Global problem

The WHO has announced that in 2021 depression will likely become the second most serious health problem in the world. This is especially important in the context of the COVID-19 pandemic, because in the scientific world one can meet the opinion that every third person who has experienced a severe course of the disease complains of neurological disorders, including those related to mental health. The catalog of troubles consists of such elements as: memory disorders, difficulty concentrating or sleeping, as well as chronic fatigue. This makes it necessary to deal with

the problems presented in the public space - this is where VR can help. Companies operating in the virtual reality industry currently cannot complain about the lack of work. The segment is developing strongly, and the evidence supporting these words can be, for example, a pilot program that was implemented at the end of 2020 in Poland - in the center of the Ministry of Interior Administration, located in Głuchołazy. It concerned therapy for convalescents (pocovid), and a proprietary VR TierOne program was used there. The whole thing brought positive results. According to the start-up's position, this equipment reduces symptoms of depression by 37%. (according to the GDS scale), the level of anxiety by 37%. (according to the HADS scale) and the level of stress - by 28% (according to the PSQ scale). According to the start-up's position, this equipment reduces symptoms of depression by 37%. (according to the GDS scale), the level of anxiety by 37%. (according to the HADS scale) and the level of stress - by 28% (according to the PSQ scale). According to the start-up's position, this equipment reduces symptoms of depression by 37%. (according to the GDS scale), the level of anxiety by 37%. (according to the HADS scale) and the level of stress - by 28% (according to the PSQ scale).

## Technology with potential

The device and technology were developed by a group of experienced scientists and technology experts. One of the people who contributed greatly to the creation of VR TierOne is **dr hab. Joanna Szczepańska-Gieracha, prof. Associate Professor, certified psychotherapist of the European Association of Psychotherapy, associated in her career with, inter alia, with the Polish Erickson Institute**. He is a character with extensive experience in helping patients with various diseases. The second important person is **Dr. Jarosław Szczygieł, a specialist in neurology and medical rehabilitation**. An equally important contribution to the development of the project is the aspect that includes the development of a music therapy layer, for which **Dr. Katarzyna Turek** is responsible.. Of course, these are only selected people involved in this initiative. The VR TierOne tool can be used not only by hospitalized patients, but also by ... doctors, psychologists, physiotherapists and nursing home residents. Some time ago, this technology was used by such institutions as: the Cardiology Center in Wrocław, the Specialist Hospital of the Ministry of Interior and Administration in Głuchołazy, the "Siwy Dym" Seniors Activation Foundation or the "Analgomed" Pain Treatment Center in Wrocław. Talks regarding the implementation of VR TierOne were also conducted, among others from the Neurotic Therapy Center in Moszna and a psychotherapeutic clinic based in Poznań.